

CLAIMS

1. A television switch module for switching output lines of television high frequency signals, comprising:

first and second input lines for respectively inputting television high frequency signals;

first and second output lines for outputting signals which are the signals after amplified;

first and second amplifiers inserted in the respective input lines for respectively amplifying input signals;

a branching unit disposed in at least one line at an input or an output of the first or the second amplifier for branching the input line;

a relay switch disposed in a further line different from the one line with the branching unit for switching either to the one line with the branching unit or to the further line branched by the branching unit;

a relay switch control means for operation to switch the relay switch based on operation from outside; and

a power supply control means for controlling power supply to the respective amplifiers, and for stopping the power supply to an amplifier inserted in an unused input line.

2. The television switch module according to claim 1, wherein:

the branching unit is disposed at each of the outputs of the first and second amplifiers inserted in the respective input lines to form two units;

the relay switch is disposed in each of the lines to form a first relay switch and a second relay switch; and

each of the relay switches has relay switch contacts, to which one branch line by the branching unit disposed in one line and one branch line by the branching unit disposed in the other line are respectively connected, and also has a relay common contact, in which this common contact is connected to each of the output lines.

3. The television switch module according to claim 2, wherein:

the power supply to the first and second amplifiers is provided through a power supply line; and

the power supply control means comprises a power supply switch for turning the power supply line on and off, and a power supply control signal line for transferring an on/off control signal to control and turn the power supply switch on and off.

4. The television switch module according to claim 2, wherein an active current stabilizing circuit is added to an amplifier output transistor of the amplifier.

5. The television switch module according to claim 2, wherein the power supply to the first and second amplifiers is provided from the output lines by way of the contacts of the relay switches.

6. The television switch module according to claim 5, wherein an active current stabilizing circuit is added to an amplifier output transistor of the amplifier.

7. The television switch module according to claim 6, wherein the amplifier comprises:

a grounded-emitter signal amplifying transistor having a base, to which a signal is input, and a collector which is connected to power supply

Vcc through a load resistance, the collector being a signal output terminal;
and

a current stabilizing circuit, added between the collector and the base of this transistor, for working to keep constant the current flowing through the load resistance so as to keep constant collector voltage V_c of the transistor.

8. The television switch module according to claim 7, wherein the current stabilizing circuit is formed of a unit of at least two transistors, and has a circuit configuration which works to cause a reference voltage for the current stabilizing circuit, as obtained by resistance voltage division of the power supply Vcc, to be equal to the collector voltage V_c of the signal amplifying transistor.

9. The television switch module according to claim 5, wherein the power supply to the amplifier is provided by way of an inductance from a line through which a high frequency signal flows.

10. The television switch module according to claim 1, wherein:
the branching unit is formed of one unit disposed in the line at the input of the first amplifier;

the relay switch is formed of one switch disposed in the line at the input of the second amplifier, and has relay switch contacts, to which one branch line by the branching unit and the other line are respectively connected, and also has a relay common contact, in which this common contact is connected to the line at the input of the second amplifier;

the power supply control means continuously provides the power supply to the first amplifier while providing the power supply to the second

amplifier by way of a standby circuit; and

the standby circuit provides the power supply to the second amplifier when a power supply switch of a television being turned ON, and stops the power supply during standby in the other time.

11. The television switch module according to claim 10, wherein when a television signal containing character information in its out-of-band region is input to the first input line, the output line of the first amplifier can output the character information even during standby.